

Application No.: 10/735,275

Docket No.: JCLA10633

In The Claims:

1. (currently amended) An emulsion type modifier for improving properties of a pressure-sensitive emulsion acrylic adhesive, the emulsion type modifier prepared by polymerizing an emulsion consisting of comprising:

- (a) 15 to 35 parts per hundred of monomers of a C6-C12 diester of a dicarboxylic acid, wherein the C6-C12 diester of the dicarboxylic acid contain about 6 to about 12 carbon atoms in each alkyl group of the diester;
- (b) 15 to 35 parts per hundred of monomers of a C2-C16 vinyl ester;
- (c) 35 to 65 parts per hundred of monomers of a C4-C8 alkyl acrylate;
- (d) 0.1 to 2.0 parts per hundred of monomers containing an acetoacetoxy functional group;
- (e) 0.1 to 2.0 parts per hundred of a nonionic surfactant;
- (f) 0.4 to 3.0 parts per hundred of an anionic surfactant; and
- (g) 60 to 70 parts per hundred of de-ionized water;

wherein a total weight of (a)+(b)+(c) is 100 parts, while (d), (e), (f) and (g) are added based on the total weight of (a)+(b)+(c).

2. (original) The emulsion type of modifier of claim 1, wherein the C6-C12 diester of the dicarboxylic acid is dioctyl maleate or dibutyl maleate.

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3. (currently amended) The emulsion type of modifier of claim 1, wherein the C2-C16 vinyl ester is selected from the group consisting of vinyl butyrate, ~~allyl acetate~~, vinyl isobutyrate and vinyl acetate.

4. (currently amended) The emulsion type of modifier of claim 1, wherein the C4-C8 alkyl acrylate is selected from the group consisting of ~~ethyl acrylate~~, butyl acrylate, 2-ethyl hexyl methacrylate and decyl acrylate, ~~methyl methacrylate and butyl methacrylate~~.

5. (original) The emulsion type of modifier of claim 1, wherein the monomers containing an acetoacetoxy functional group are monomers of ethyl acetoacetoxy methacrylate or monomers of butyl acetoacetoxy methacrylate.

6. (original) The emulsion type of modifier of claim 1, wherein the nonionic surfactant is selected from the group consisting of polyoxethyene nonyl phenyl ether, polyoxethyene octyl phenyl ether, polyethylene glycol alkyl phenol ether, diallyl aliphatic acid ester and polyethylene glycol diallyl aliphatic acid ester.

7. (original) The emulsion type of modifier of claim 1, wherein the anionic surfactant is selected from the group consisting of sodium dodecylbenzosulfonate, sodium dodecylsulfonate, disodium dodecyl sulfonate phenyl ether, disodium n-stearyl succinate sulfonate and ammonium polyoxethyene nonyl phenyl ether sulfate.

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8. (original) A pressure-sensitive adhesive, comprising:  
100 parts per hundred of a pressure-sensitive emulsion acrylic adhesive; and  
5 to 30 parts per hundred of the emulsion type of modifier of claim 1.